2853

TRANSMITTAL LETTER (General - Patent Pending)	Docket No. 03280057AA

In Re Application Of: **T. Yamada et al.**

Serial No.	Filing Date	Examiner	Group Art Unit
09/805,216	3/14/01	L.S. Nguyen	2853

Title: **Line Scanning Ink Jet Recoding Device Capable of Finely and Individually Controlling Ink Ejection From Each Nozzel**

TO THE COMMISSIONER FOR PATENTS:

Transmitted herewith is:

Submission of Missing Page of Verified English Language Translation and Submission of Comparative Table Postcard

in the above identified application.

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Signature

Dated: **Oct. 3, 2003**

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of

Shinya Kobayashi

Serial No.: 09/805,216 Group Art Unit: 2853

Filed: March 14, 2001 Examiner: Lam S. Nguyen

For: LINE SCANNING INK JET RECORDING DEVICE CAPABLE OF FINELY AND INDIVIDUALLY CONTROLLING INK EJECTION FROM EACH NOZZLE

Box Non-Fee Amendment
Commissioner for Patents
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SUBMISSION OF MISSING PAGE OF VERIFIED ENGLISH LANGUAGE TRANSLATION AND SUBMISSION OF COMPARATIVE TABLE

Sir:

A response to the office action mailed June 4, 2003, was filed in the USPTO on September 4, 2003. On September 22, 2003, a supplemental amendment and submission of verified English language translation of priority application was filed in the USPTO. This September 22, 2003 filing was discussed with the Examiner by telephone on September 30, 2003 and October 1, 2003.

Attached hereto is page 32 of the verified English language translation. This page was inadvertantly missing from the translation document filed in the USPTO on September 22, 2003.

Also attached is a table showing where various features of the claimed invention can be found in the Japanese Priority Application.

In view of the submissions which have been made in this case, neither JP 2000-042396 nor U.S. Patent 6,471,352 are proper references against the claims in the present application.

The application should now be in prima facie condition for allowance. Therefore, prompt reconsideration and allowance of the claims at an early date is requested.

Respectfully submitted,

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printing a high quality image can be provided.

[0055]

Next, other embodiment will be explained with reference to Fig. 13.

[0056]

Conventionally, when a plurality of nozzles are driven, the method called multisift was used in order to reduce interference on the ejection speed Vd and the ejection amount m among the nozzles. For example, when the time width of a driving pulse is as short as 10μs, whereas a dot frequency for repeatedly recording a dot is 100μs, nozzles are divided into a plurality of groups and the driving pulses corresponding to the nozzles in the same group are controlled not to be output in synchronization. It is proved that the interference is suppressed by this. In this invention, it is difficult to perform the multishift, because a generation timing of a driving pulse differs among the nozzles as a result of the correction of the impingement position (the second stage). Therefore, the interference may cause an undesirably large effect.

[0057]

In order to overcome these problems, according to this device, a nozzle profile data 211 adjusting means described next is provided to the computer portion 201.

[0058]

CLAIM	FEATURE	
2	head	[0016] head 207
	converting unit	[0021][0025] Fig.9 nozzle data converting portion 204
	feed unit	[0015][0028] Fig.2 sheet feed unit 208
	ejection element	[0028] Fig.3 piezoelectric element 304
	memory storing nozzle profile data	[0021][0022] Fig.6 nozzle profile data 211
	updating unit	[0042] profile data update means 101
3	designating unit	Fig.16
	measuring unit	[0053][0072] measuring unit 102, measuring unit 1602
8	deflection electric field generating unit and charging electric field generating unit	[0063] Fig.15 deflection electrodes 1403-1 and 1403-2
12	leveling unit	[0058][0058] nozzle profile data 211 adjusting means
13	resolution changing unit	[0076]-[0078] Fig.21 elements 2102-2110